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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,036	04/11/2001	Alfred M. Gabriele	02208-1	8351

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EXAMINER
VERSTEEG, STEVEN H

ART UNIT	PAPER NUMBER
1753	

DATE MAILED: 03/13/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/833,036	Applicant(s) GABRIELE ET AL.	
	Examiner Steven H VerSteeg	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-33* is/are pending in the application.

4a) Of the above claim(s) *16-24* is/are withdrawn from consideration.

5)☒ Claim(s) *12-14 and 25-33* is/are allowed.

6)☒ Claim(s) *1,4 and 15* is/are rejected.

7)☒ Claim(s) *3 and 5-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,334,942 B1 to Haba et al. (Haba) in view of US 5,981,079 to Mount, III et al. (Mount).

3. For claim 1, Applicant requires a method of coating a substrate comprising: providing a substrate, forming a polymeric layer by electrophoretically applying a polymeric precursor, polymerizing the precursor, and applying a metal coating to at least a portion of the polymerized layer. The metal coating is applied under sub-atmospheric conditions.

4. Haba discloses a process (col. 5, l. 11) comprising providing a substrate (**20**), electrophoretically applying a photoresist (**24**) and polymerizing it (col. 5, l. 27-42), and depositing a metal layer (**28**) thereon. The metal layer is deposited by electroplating (col. 5, l. 43-44). The metal layer can be gold, osmium, rhodium, platinum, tin, nickel, chromium, and their alloys (col. 5, l. 45-49).

5. Haba does not disclose that the metal layer is formed under sub-atmospheric conditions.

6. Mount discloses that for deposition of aluminum, copper, silver, gold, and chromium, sputtering (which is under vacuum) and electroplating are equivalents (col. 5, l. 15-22).

7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Haba to deposit the metal layer by sputtering because of the

knowledge that sputtering and electroplating are equivalents for depositing metals such as gold, copper, and chromium.

8. For claim 15, Applicant requires a method comprising forming a polymeric coating form an electrophoretically applied polymeric precursor and applying a layer of metal using PVD.

9. As noted above, Haba discloses electrophoretically depositing a photoresist polymer on to a substrate and then electroplating a metal layer thereon.

10. Haba does not disclose PVD depositing the metal layer, but Mount provides such a motivation.

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Haba to deposit the metal layer by sputtering because of the knowledge that sputtering and electroplating are equivalents for depositing metals such as gold, copper, and chromium.

12. Claims 1, 4, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,004,672 to D'Ottavio et al. (D'Ottavio) in view of US 5,981,079 to Mount, III et al. (Mount).

13. Claims 1 and 15 are described above.

14. D'Ottavio discloses providing a substrate, electrophoretically depositing a polymer precursor, polymerizing the precursor, and depositing a copper layer thereon by electroplating (Example 1). After the polymer layer is polymerized, the layer is heated to 200°F for about 5 minutes.

15. D'Ottavio utilizes electroplating to deposit the copper metal layer. Mount is also described above and provides the motivation to utilize sputtering rather than electroplating.

16. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of D'Ottavio to deposit the metal layer by sputtering because of the knowledge that sputtering and electroplating are equivalents for depositing metals such as gold, copper, and chromium.

17. For claim 4, Applicant requires the polymeric precursor to be acrylic, epoxy, urethane, or combination thereon. D'Ottavio discloses that the polymeric precursor can contain an acrylate or methacrylate (Example 1).

Double Patenting

18. Claims 5 and 6 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 25 and 28. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Amendment

19. The objection to the specification presented in the office action mailed August 21, 2002 is withdrawn in light of the amendment.

20. The 112 second paragraph rejection presented in the office action mailed August 21, 2002 is withdrawn in light of the amendment.

21. The 102(b) rejection of claims 12 and 13 over US 5,004,672 to D'Ottavio et al. (D'Ottavio) presented in the office action mailed August 21, 2002 is withdrawn in light of Applicant's arguments.

22. The 103(a) rejection of claims 1 and 15 over US 6,334,942 B1 to Haba et al. (Haba) in view of US 5,981,079 to Mount, III et al. (Mount) presented in the office action mailed August 21, 2002 stands, but the rejection of claims 12 and 13 are withdrawn in light of Applicant's arguments.

23. The 103(a) rejection of claims 1 and 15 over US 5,004,672 to D'Ottavio et al. (D'Ottavio) in view of US 5,981,079 to Mount, III et al. (Mount) presented in the office action mailed August 21, 2002 stands.

Allowable Subject Matter

24. Claims 12-14 and 25-33 are allowed.

25. Claims 3 and 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

26. The following is a statement of reasons for the indication of allowable subject matter: it is neither anticipated nor obvious over the prior art of record to have a method of coating a substrate as claimed by Applicant in claim 3 wherein the polymeric precursor has its temperature elevated to a temperature of at least about 320 Fahrenheit in the polymerizing step.

27. It is also neither anticipated nor obvious over the prior art of record to have a method of coating a surface as claimed by Applicant in claim 12 wherein the temperature of the polymeric coating is elevated to at least about 400 Fahrenheit for at least about 6 minutes.

28. D'Ottavio discloses heating the polymer layer to a temperature of 200 Fahrenheit, which is not about 400 Fahrenheit. Modifying D'Ottavio would require hindsight. Neither D'Ottavio

nor Haba disclose the temperature in the polymerizing step. Modifying D'Ottavio or Haba to use a temperature of at least 350 Fahrenheit would require hindsight.

Response to Arguments

29. Applicant's arguments filed February 6, 2003 have been fully considered but they are not persuasive.

30. Applicant has argued that sputtering and electrodepositing cannot be used interchangeably. Applicant then states that the examiner should provide evidence that the processes are similar to uncured polymer coated surfaces. The examiner disagrees with Applicant's assessment of the burden.

31. The examiner has the initial burden of showing obviousness. Once obviousness is shown, the burden is on the Applicant to refute obviousness. In this case, the examiner has provided a reference, Mount, which shows that sputtering and electroplating are equivalents for depositing copper. Applicant has attempted to refute this obviousness by merely presenting arguments regarding the effects of sputtering on the resist. Applicant has provided no scientific evidence to support their claim. Applicant has merely provided arguments, which are not persuasive. The burden is on Applicant to refute obviousness, not the examiner. A declaration scientifically showing that sputtering would not be equivalent to electroplating on a resist would be persuasive. Mere arguments without scientific evidence are not persuasive.

Conclusion

32. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

33. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

34. This application contains claims 16-24 drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

35. In the event that papers are missing from this communication, please contact the Customer Service Center for Technology Center 1700 at (703) 306-5665.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H VerSteeg whose telephone number is (703) 305-4473. The examiner can normally be reached on Mon - Thurs (7:30 AM - 6:00 PM).

37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (703) 308-3322. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

38. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven H. VerSteeg
Primary Examiner
Art Unit 1753

shv
March 10, 2003